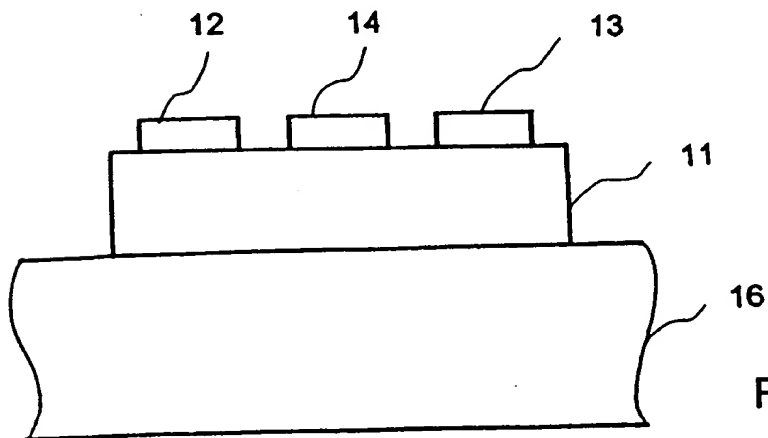


(A)



(B)

FIG. 1

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THIN FILM MATERIAL	LATTICE CONSTANT (Å)
ZnO	3.249
AlN	3.112
GaN	3.189
InN	5.76

FIG. 2

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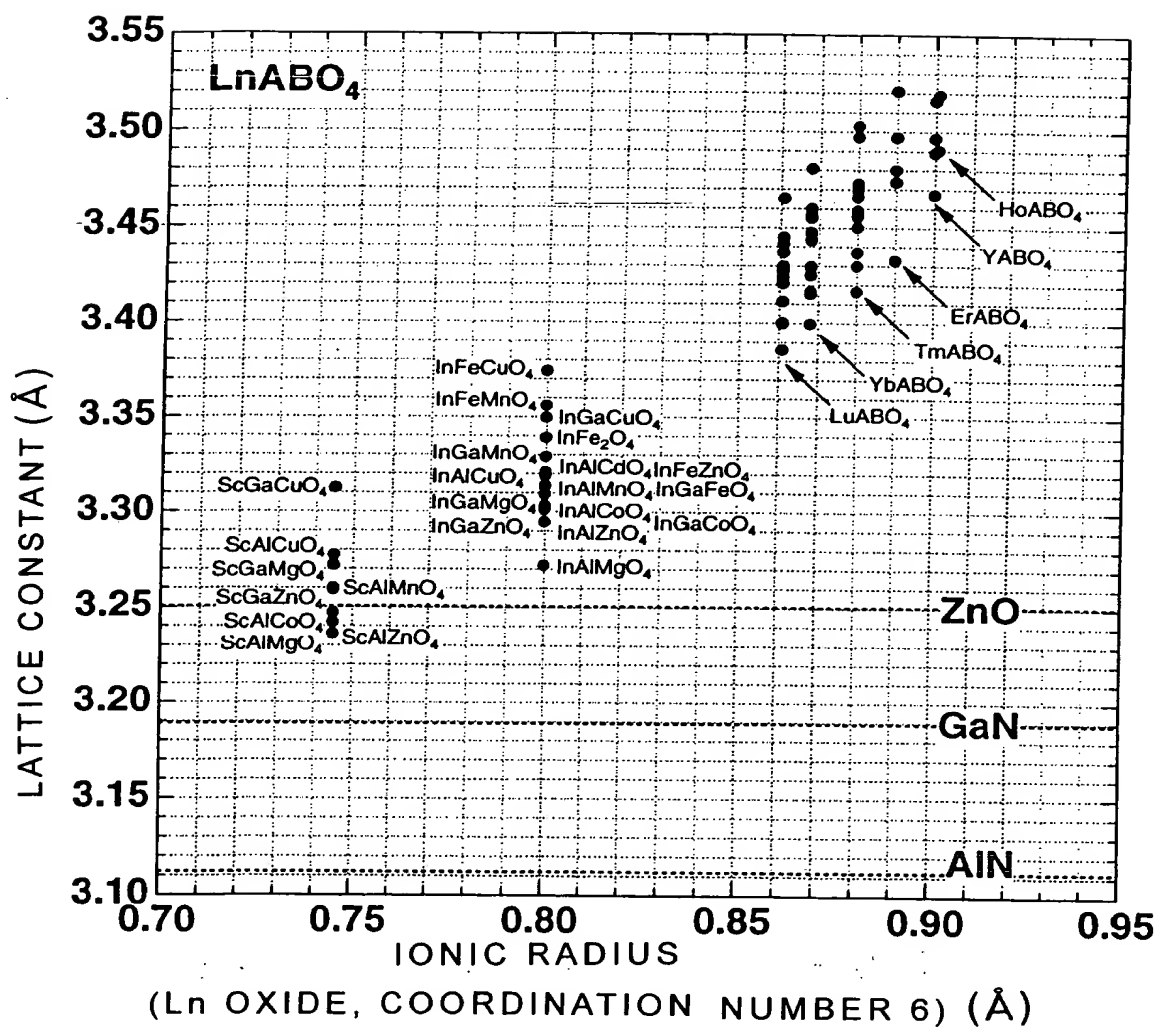


FIG. 3

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SUBSTRATE MATERIAL	LATTICE CONSTANT(A)
ScAlMgO ₄	3. 236
ScAlZnO ₄	3. 242
ScAlCoO ₄	3. 247
ScAlMnO ₄	3. 260
ScGaZnO ₄	3. 259
ScGaMgO ₄	3. 272

FIG. 4

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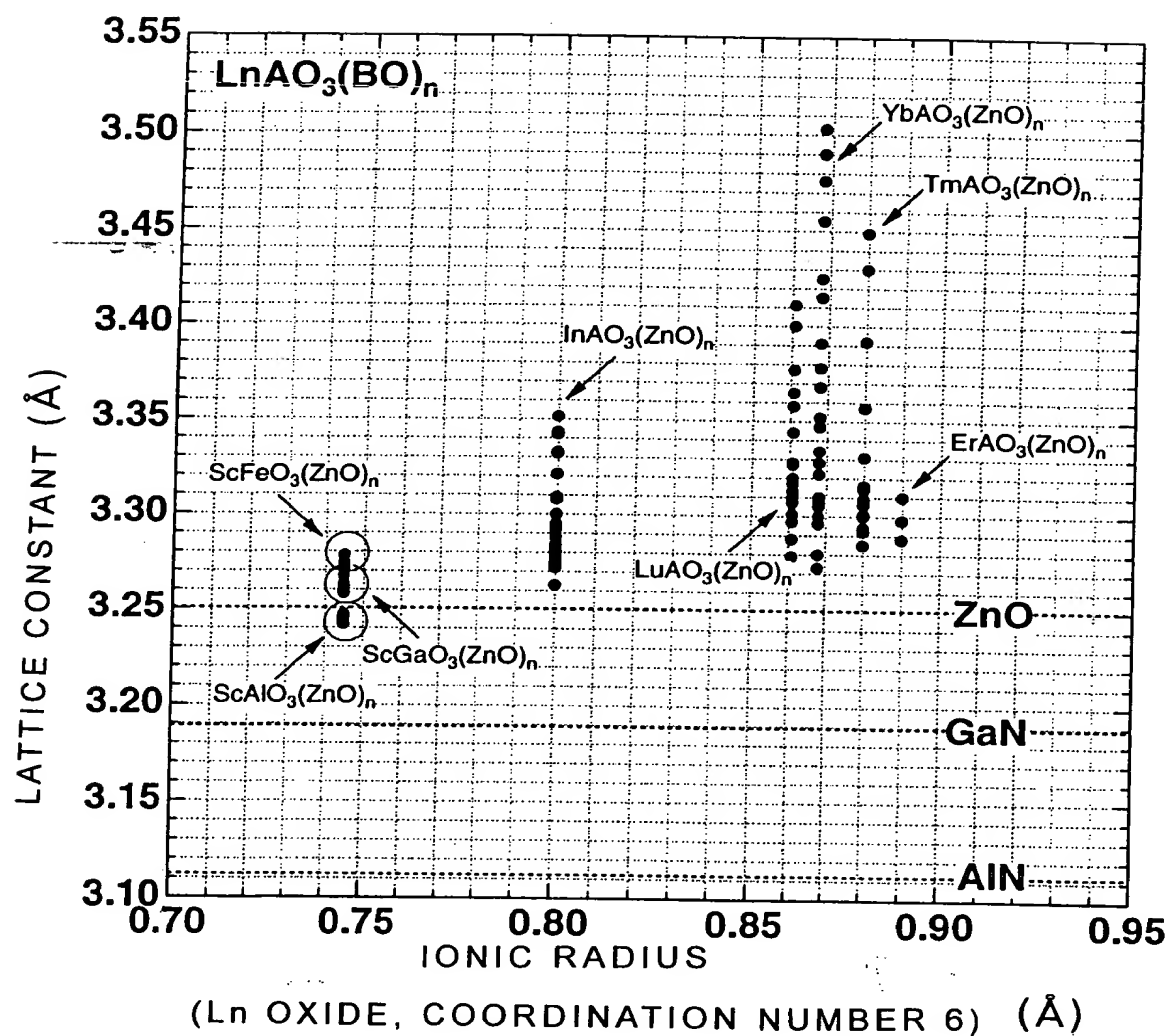
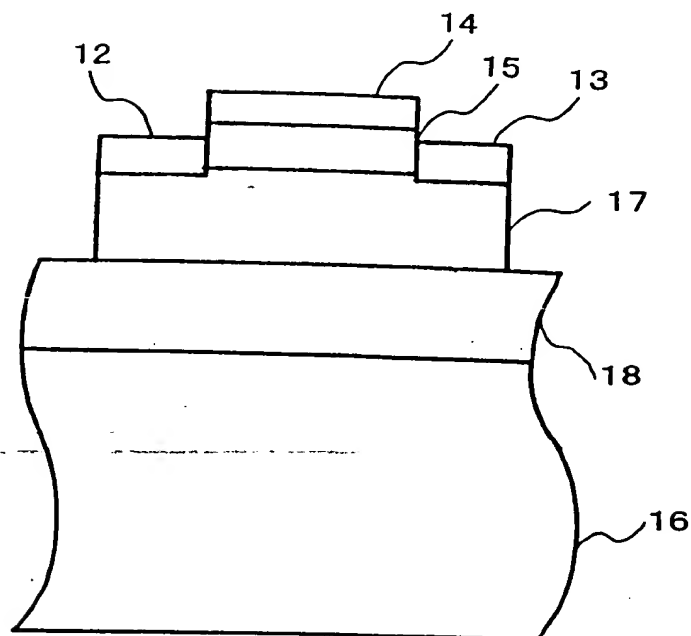
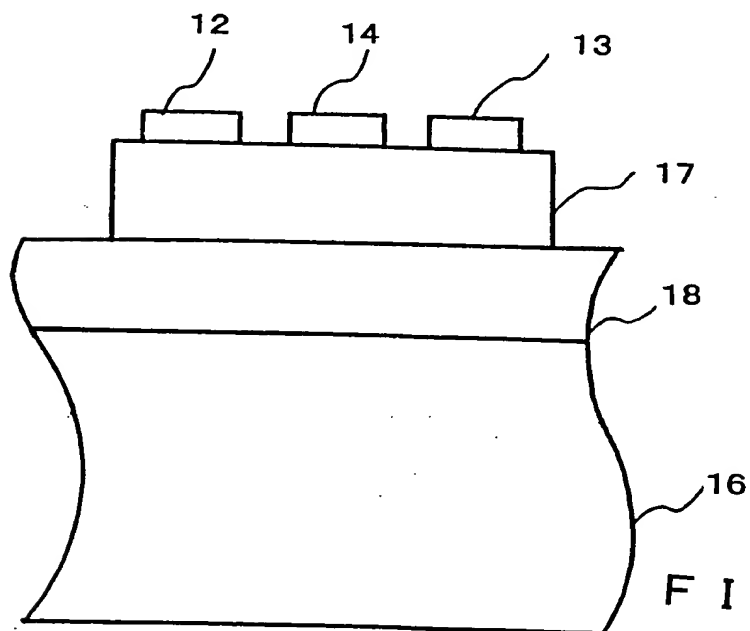


FIG. 5

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(A)



(B)

FIG. 6

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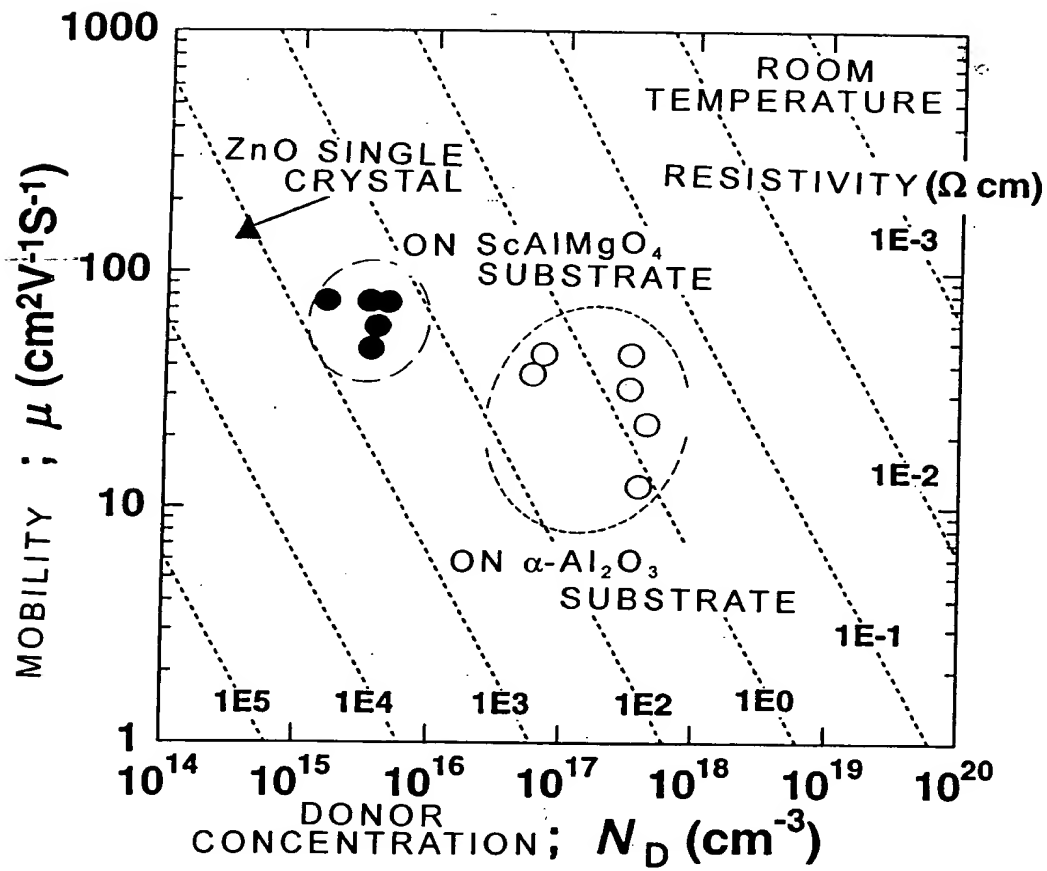


FIG. 7

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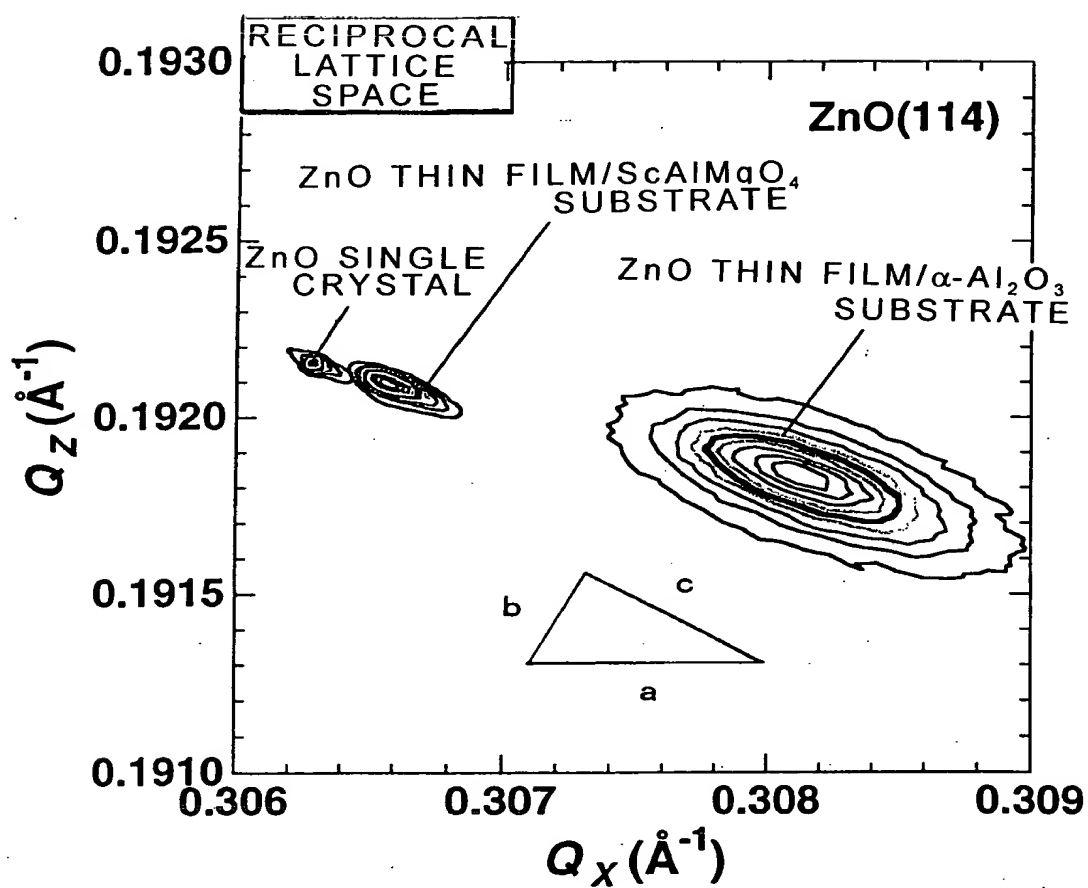


FIG. 8

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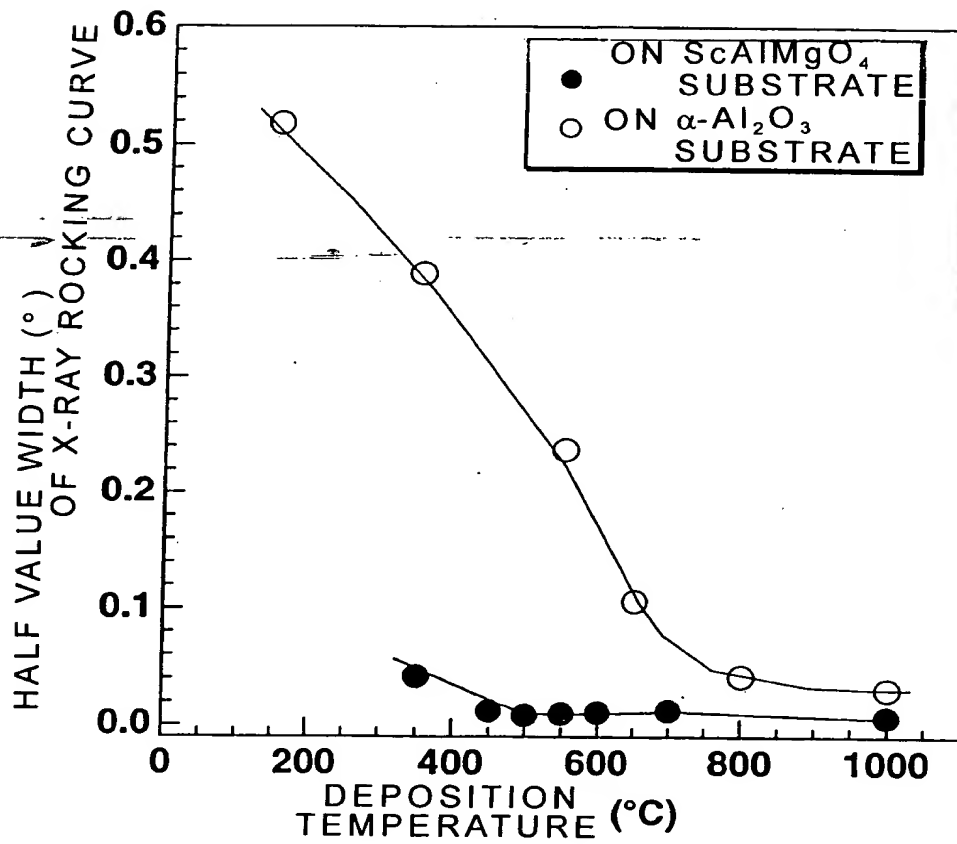


FIG. 9

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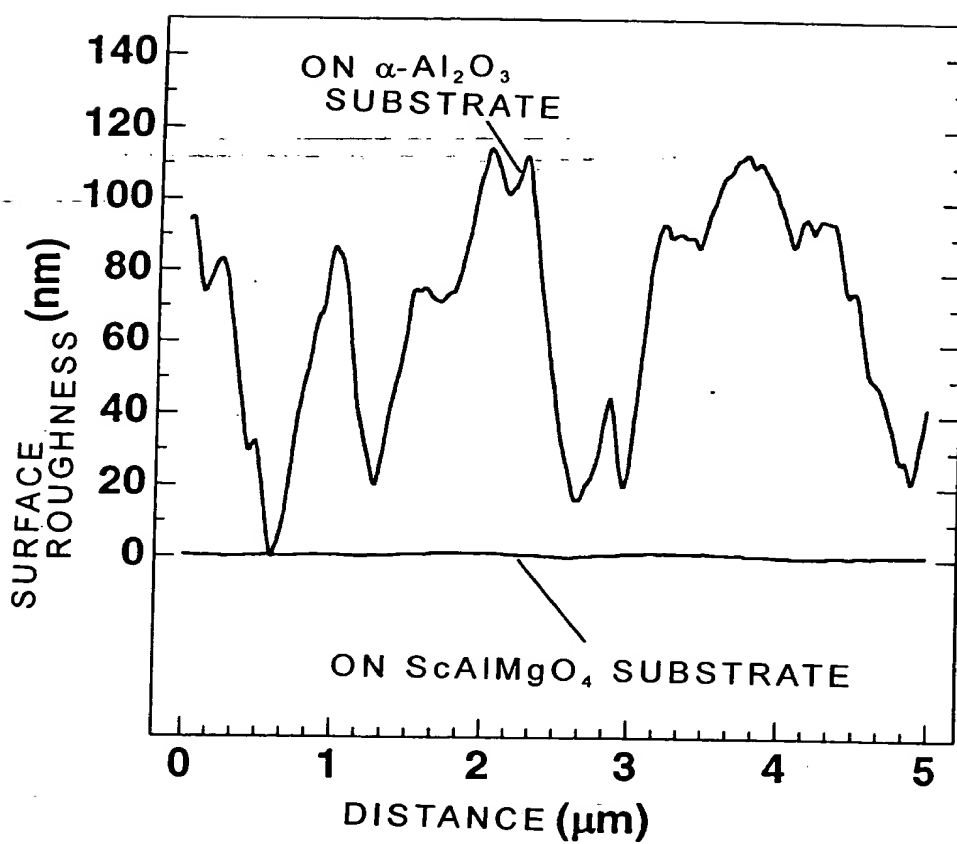


FIG. 10

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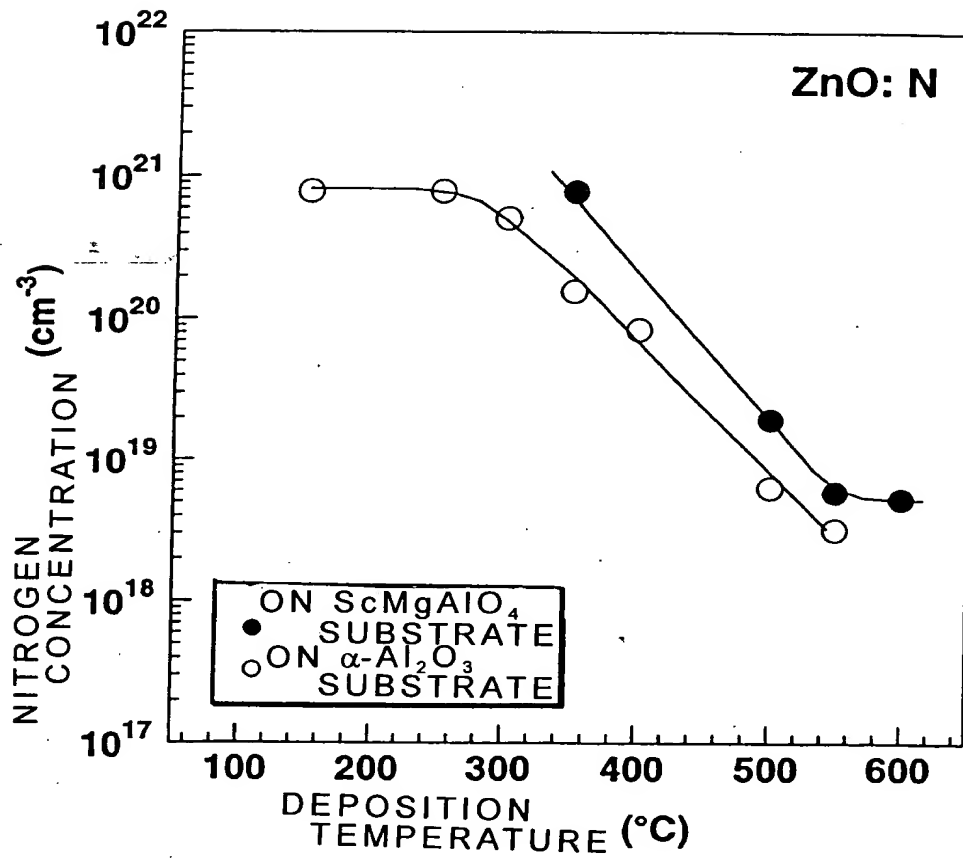
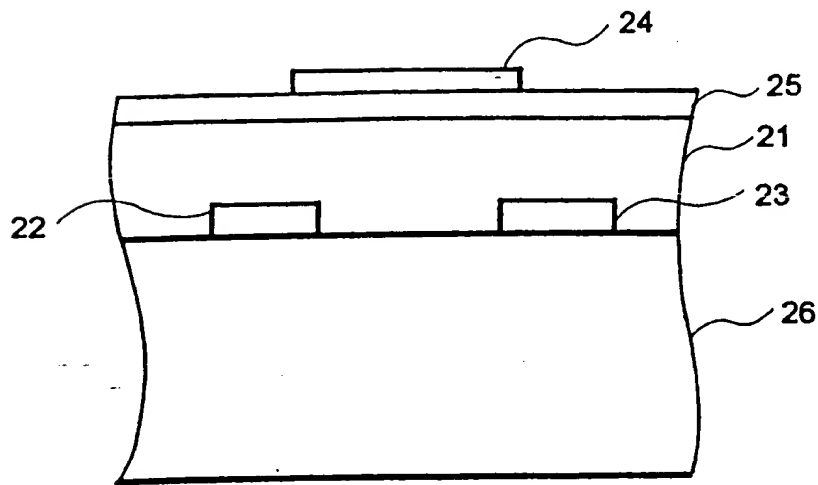
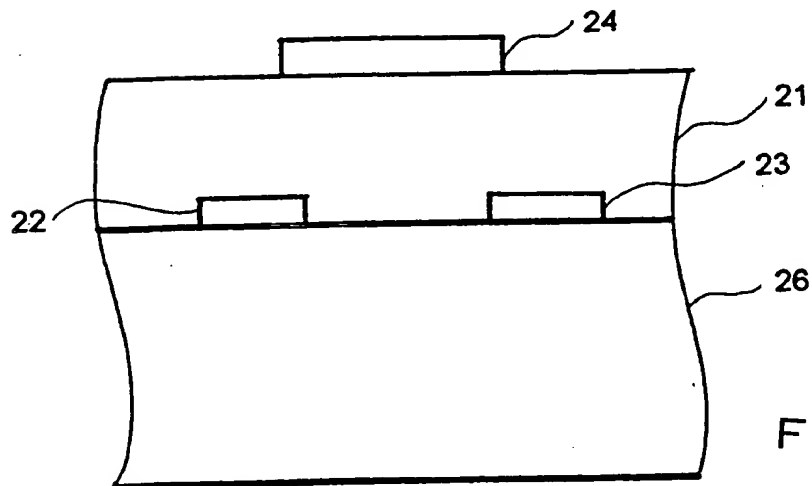


FIG. 11

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(A)



(B)

FIG. 12

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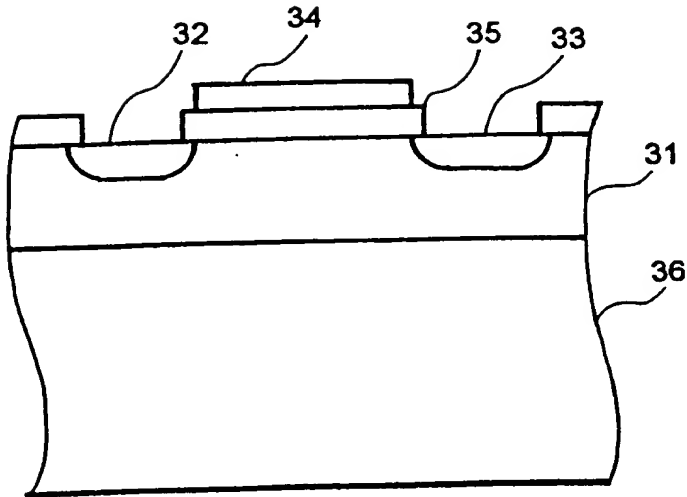


FIG. 13

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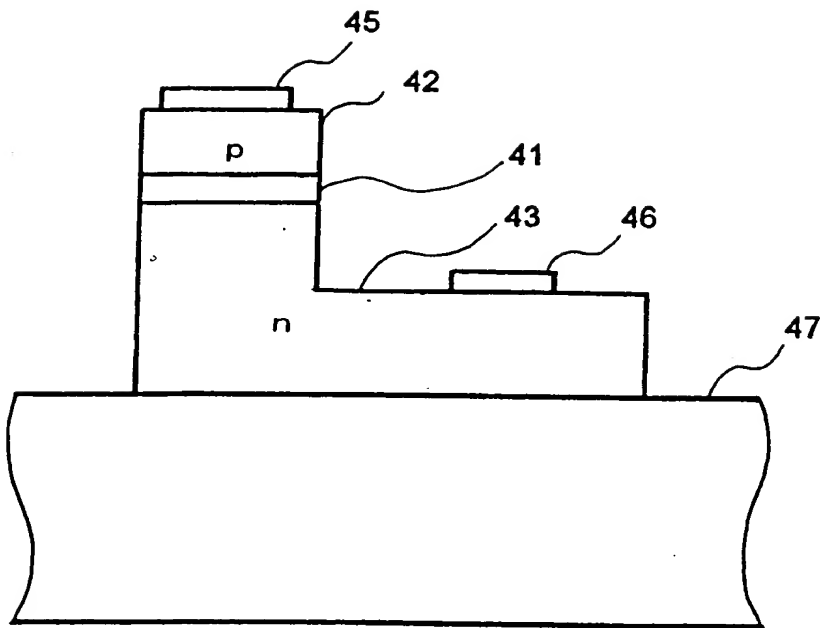
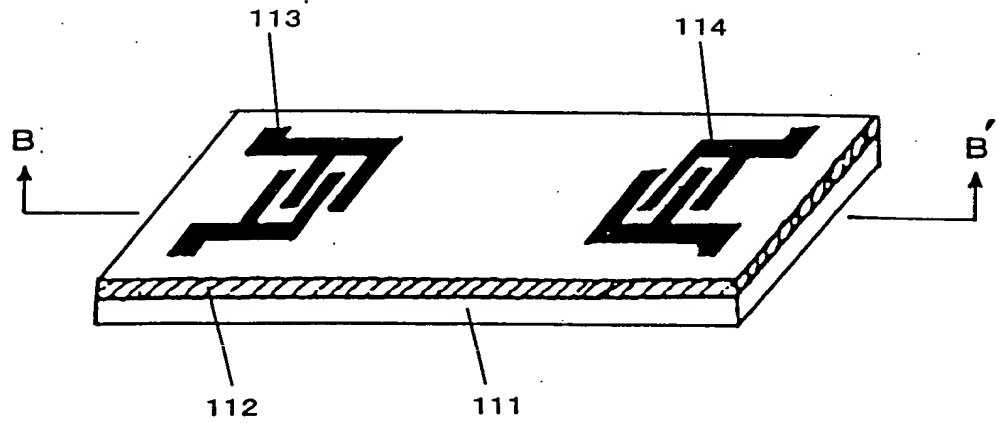


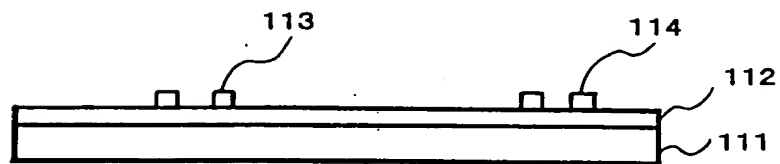
FIG. 14

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(A)



(B)

FIG. 15

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